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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,503	07/07/2003	Ross Brown	12,520	4419

7590 09/20/2004  
William W. Haeffliger  
Suite 512  
201 So. Lake Ave.  
Pasadena, CA 91101

EXAMINER	
DOERRLER, WILLIAM CHARLES	
ART UNIT	PAPER NUMBER
3744	

DATE MAILED: 09/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/613,503

Applicant(s)

BROWN, ROSS

Examiner

William C Doerfler

Art Unit

3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 removes a step from claim 1, from which it depends. By definition all dependent claims contain all subject matter of the independent claim from which they depend. It is unclear whether the second compression step is required for to meet the claimed method of claim 4. Claims 5 and 6 depend from claim 4, so they are unclear due to their association.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3,7,9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guillemint in view of Kumar.

Guillemint discloses applicant's basic inventive concept, an air separation system with multiple compressors and a turbine which powers the booster compressor to treat air entering the separation system, substantially as claimed with the exception of disclosing

the removal of water between steps. Kumar shows the removal of water following compression and cooling steps to be old in the air treatment art. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention from the teaching of Kumar to modify the air separation system of Guilleminot by removing water between steps to ensure proper functioning of the air separation device.

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guilleminot in view of Kumar as applied to claims 1-3,7,9 and 10 above, and further in view of Scharpf et al.

Guilleminot, as modified, discloses applicant's basic inventive concept, an air separation system which pretreat the air using multiple compression, cooling and water removal steps before expanding the air prior to a final removal stage, substantially as claimed with the exception of a bypass around the second compression stage. Scharpf et al show this feature to be old in the air treatment art with lines 210 and 10 controlling the air entering separation system 14 (expander 314 also follows second compressor 16 and feeds the separation unit). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention from the teaching of Scharpf et al to modify the air treatment system of Guilleminot by controlling the air flowing into the second compressor to improve control over air flow. In regard to claim 5, although a valve is not shown, one is assumed to be present since the control of air through the passages is clearly intended. In regard to claim 6, Official Notice is taken that 5 degrees Celsius would be an obvious outlet temperature for the turbine to prevent ice buildup in the system which could block passages and shut down the system.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guillemot in view of Kumar as applied to claims 1-3,7,9 and 10 above, and further in view of Eggleston et al.

Guillemot, as modified, discloses applicant's basic inventive concept, an air treatment method and system for compressing and drying air, substantially as claimed with the exception of variable nozzles for the turbine. Eggleston et al show this feature to be old in the air treatment art. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention from the teaching of Eggleston to modify the compression and expansion system of Guillemot by using a turbine having variable nozzles to improve control over the air leaving the system.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gaumer shows a compression and water removal system for an air separation system. Vandebussche shows an air separation system with multiple compressors, a turbine for the feed and a bypass around the second compressor. Asfia et al and Jonquieres show air cycle systems with a second compressor which can be bypassed. Zakon, Markbreiter et al, Jujasz et al and Rische show multiple stage compression, with intercooling, for air separation systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C Doerrler whose telephone number is (703) 308-0696. The examiner can normally be reached on Monday-Friday 6:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Esquivel can be reached on (703) 308-2597. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



William C Doerrler  
Primary Examiner  
Art Unit 3744

WCD